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MONTHLY LETTER OF THE BUREAU OF ENTOMOLOGY
UNITED STATES DEPARTMENT OF AGRICULTURE

Number 41.

September, 1917.

THE WAR LIBRARY.

Subscriptions are being received for a Library War Fund of \$1,000,000.00 to provide reference and circulating libraries for our fighting men, both soldiers and sailors. This fund is being raised by the American Library Association at the request of the United States Government. The money will provide library buildings at the thirty-two (32) cantonments in the United States, as well as books, equipment and men trained in library work to take charge of same.

A survey of the entire field has determined that \$1.00 will furnish a book, keep it in circulation, replace it when worn out and all the time pay a share of the expense of properly housing and caring for these libraries in the various camps. The Y. M. C. A. and Knights of Columbus and other organizations are enthusiastically cooperating and every one of their huts will be a branch library in this system; recruits, men in training, men being mobilized, men in garrisons, in rest periods, on the march, at the front, the crippled, the wounded, the interned, prisoners of war, men awaiting muster, sailors on shipboard and sailors at the various naval stations- all will have this service.

As camps are closed in America books will follow our troops to England and France for camp or hospital use, others will be sent to permanent regular Army and Navy posts in America and the remaining books, if any, probably will be used to form new permanent public libraries or to strengthen old ones in parts of America where books and libraries are needed.

Such libraries have been instituted by Great Britain and units in East Africa, Italy and Russia also have been supplied with volumes, much to the pleasure of the soldiers and sailors who have little to relieve their loneliness and to brighten the dreary times of waiting to move forward.

Contributions to this fund from members of the Department of Agriculture should be sent to Miss C. R. Barnett, librarian, U. S. Department of Agriculture.

ILLUSTRATIONS FOR PROSPECTIVE PUBLICATIONS.

(Mr. W. R. Walton addresses the following notice to the the men of his branch but since it applies largely to the entire Bureau force, it is reprinted here.)

The attention of the men of this branch is called to the fact that manuscripts are frequently submitted for publication which do not include a list of illustrations. When this is the case it necessitates work for the persons who are called upon to prepare the paper for the attention of the editors. It is strongly urged that in all cases such a list be furnished and if manuscripts are submitted hereafter without such a list they will be returned to the author with a request that this list be furnished.

In case the illustrations are to be reprinted from a former publication of the Bureau, the number of the illustration in this publication together with the page on which it occurs should be given in the list. If

drawings are required, this should be indicated, and if photographic plates are furnished to be included they also should be indicated in this list. This regulation will be as much for the benefit of the authors as for the persons who have to handle the manuscripts after they reach this office.

LIBRARY

Miss Mabel Colcord, Librarian.

NEW BOOKS.

- Berlese, Antonio. — Insetti delle case e dell' uomi e malatti che diffondono. Milano, Ulriso Hoepli, 1917. 293p. illus. pl.
- Bragina, — The strawberry filer (*Emphytus fulvipes* Thoms. *Tentredo truncatus* Kl.) Simferopol, 1916. 7p. pl.
Text in Russian.
- Cameron, A. E. — The insect association of a local environmental complex in the district of Holmes Chapel, Cheshire, Edinburgh, 1917.
(Trans. Royal Soc. Edinburgh, v.52, pt. 1, p. 37-78, 2 pl.)
- Elwyn, Adolph — Effect of humidity on pupal duration and on pupal mortality of *Drosophila ampelophila* Loew. (Bulletin American Museum of Natural History, vol. XXXVII, Art. XV, p. 347-353, New York, May 28, 1917)
- Hebard, Morgan. — The Blattidae of North America north of the Mexican boundary Philadelphia, 1917. 284p. X pl. (Memoirs of the American Entomological Society no. 2)
- Lectures on military sanitation and management of the sanitary service. Army service school special report on officers' training camps. Washington, Government printing office, 1917. 109p.
- McCulloch, C. C. — Sanitation in the trenches. (American Medical Journal v. 69, p. 81-87 and 183-185, July 14-21, 1917)
- Nelson, E. W. — The rat pest. (National Geographic Magazine v.32, no. 1, p. 1-23, illus. July, 1917)
- Strickland, E. H. — The army cutworm (*Euxoa (Chorizagrotis) auxiliaris* Grote Ottawa, 1916. (Canada- Dept. Agr. Div. Ent. Bul. 13)
- Williamson, E. B. — Directions for collecting and preserving specimens of dragonflies for Museum purposes. Ann Arbor, Dec. 1, 1916. 15p. illus. (Univ. of Michigan, Museum of Zool. Misc. pub. no. 1)
- Zoopathologica; scientific contributions of the New York zoological society on the diseases of animals v.1, no. 1-2; Aug. 1916-July 1917.

BEE CULTURE

E. F. Phillips, Apiculturist in Charge.

E. F. Phillips left September 26 for an extended western trip, on which he will visit the directors of extension in Iowa, Nebraska, Colorado, Wyoming, Utah Idaho, Washington, Oregon, California, Arizona, and New Mexico. In Utah, Idaho and California conferences are being arranged with beekeepers and county agents by the extension directors. Doctor Phillips expects to return about November 15.

Kennith Hawkins spent the entire month in Virginia, holding meetings of beekeepers in cooperation with county agents. He plans to spend October in West Virginia. C. E. Bartholomew has entirely recovered from his illness and

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is again at work in Tennessee.

The last of the circular letters to beekeepers were mailed September 15. During the summer 340,500 mimeograph circulars and letters have been sent to beekeepers throughout the country. The response has been highly satisfactory. In spite of the small honey crop from white clover, the honey crop of the year was large and beekeepers are planning for increase in production in 1918.

SOUTHERN FIELD CROP INSECT INVESTIGATIONS.
W. D. Hunter, Entomologist in Charge.

Allan H. Jennings has been commissioned a first lieutenant in the Sanitary Corps of the United States Army.

Doctor Hunter spent the latter part of the month at Hearne, Texas, superintending the eradication of an outbreak of the pink bollworm at that place.

On October 4, a conference of southern entomologists was held at New Orleans to discuss the pink bollworm situation. It was attended by W.E.Hinds, Alabama; Franklin Sherman, jr., North Carolina; E.L.Worsham, Georgia; Wilmon Newell, Florida; E.E.Scholl and E.L.Ayers of the Texas Department of Agriculture; Prof. S.W.Bilising of the Texas A. and M. College; W.R.Dodson, Director of the Louisiana Experiment Station; B.R.Coad, Tallulah, La., T.E.Holloway and W.D.Hunter. After a full discussion a resolution was passed to the effect that unless further infestation is found at some point in Texas it is unnecessary for any of the southern states to modify their present quarantine regulations or promulgate new ones.

DECIDUOUS FRUIT INSECT INVESTIGATIONS.
A. L. Quaintance, Entomologist in Charge.

On September 14 a conference was called by Dr. L. O. Howard at Riverton, N. J. to carefully investigate the present status of the recently introduced Japanese beetle, *Popillia japonica*. Those in attendance at the conference were: Dr. L. O. Howard, Prof. J. G. Sanders, Dr. T. J. Headlee, H. B. Weiss. E. R. Sasscer, Wm. O. Ellis and Dr. A. L. Quaintance. It was found that the beetle had established itself over an area of some 500 or 600 acres, being quite abundant in certain parts of this area. Thorough-going life history work is under way under the immediate direction of Mr. Wm. O. Ellis in cooperation with the New Jersey Agricultural Experiment Station. Special effort will be made to confine the insect to its present area of distribution and eradication measures will be undertaken if further study of the insect indicates such action as at all likely to be effective,

Messrs. Dwight Isley and H. C. Ingerson have recently completed an insect survey trip in the orchard section of Arkansas, Missouri and Kansas. This trip was made in connection with the recently established laboratory for deciduous fruit insect investigations at Bentonville, Ark.

M. A. Yothers, formerly assistant Professor of Entomology in the Washington Agricultural College, has been appointed to the position of Specialist in Apple Insect Investigations, and will undertake a thorough-going study of the codling moth and other orchard pests in the Rogue River Valley, Oregon in cooperation with the Oregon Agricultural Experiment Station.

Oliver I. Snapp, a graduate of the Virginia Polytechnic Institute, has been appointed as a special field agent under the Food Production Act, and will be as-

signed to emergency extension work in deciduous fruit insect control in Mississippi, Georgia and Alabama.

Jesse M. Robinson, a graduate of the University of Miami, and a graduate student of the Ohio State University, has been appointed a special field agent under the Food Production Act, and will be assigned to emergency extension work in deciduous fruit insect control in North Carolina and Tennessee.

William R. Martin, a graduate of the Kansas Agricultural College, has been appointed a special field agent under the Food Production Act, and will be assigned to emergency extension work in deciduous fruit insect control in Kansas.

Miss Margaret L. Moles, a post-graduate student at Cornell University, has been appointed Insect Delineator to fill the vacancy caused by the death of J. F. Strauss.

FEDERAL HORTICULTURAL BOARD
C. L. Marlatt, Chairman.

In relation to the Texas border control, the fumigation of all cars in specially constructed houses is being seriously considered as a means of preventing accidental carriage of living pink bollworm moths as well as for the destruction of any larvae in cotton seed intermixed with merchandise or in the crevices of cars in lieu of the existing fumigation of the interior of such cars. Tentative plans for the construction of suitable fumigating houses or sheds and the generating apparatus have been prepared. Prior to the establishment of such fumigation, the Board, in cooperation with the Bureau of Entomology, will conduct actual tests in the fumigation of cars to determine the practicability and efficiency of such house fumigation in comparison with the existing interior fumigation of cars. The exterior of any cars in doubt are now being cleansed by blasts of air or by water sprays, and there is also under consideration the exterior spraying of such cars with petroleum oils or other insecticides.

The special appropriation for the establishment of a cotton-free zone and control of the pink bollworm in Texas and Mexico, referred to in the July letter, has been included and approved by both Houses in the urgent deficiency bill now in Congress. This assures the securing of this fund. The amount is \$250,000 and will be available on the passage of the bill.

Mr. Busk was authorized to make his third trip of exploration in Mexico and started about August 20. He reports finding the pink bollworm at a point a little and north of Monterey, Mexico, but that it apparently does not occur between this point Brownsville. Further researches in Mexico were, however, interrupted and he was recalled to Texas on account of the finding of pink bollworm infestation at Hearne, Texas.

The reporting Sept. 12, of a single specimen of the pink bollworm in a field at Hearne, Tex., adjacent to one of the mills which had received a considerable quantity of seed from Mexico prior to the quarantine of November of last year has led to thorough-going clean-up operations in respect to all cotton fields adjacent to this mill, and similar clean-up operations will follow adjacent to all other mills in Texas which have received Mexican seed. Dr. W. D. Hunter, went at once to Texas to give personal direction to this work. It is believed that control measures have been taken with sufficient promptness and thoroughness to prevent the establishment of this pest at any of these points. The clean-up at Hearne has been with the aid of some 25 entomologists assembled there from the forces of the Federal Horticultural Board, the Bureau of Entomology, and the inspection and ento-

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mological experts of the State of Texas. There have also been employed in the clean-up and destruction of cotton fields over 400 laborers. The thorough-going inspection at Hearne resulted in finding this pest in one other field also near the mill. All the fields in the vicinity of Hearne within possible range of infestation have been destroyed, root and branch, the cotton pulled and burned, scattered cotton picked and burned, and the bare land burned over with a burner such as is used in softening asphalt in repairing pavements. Thorough-going measures have been taken also to safeguard the harvest lint and seed. Similar measures, so far as may be necessary, will be taken at other mills whether any pink bollworms are found there or not as an extreme but necessary precaution under the circumstances. With these 25 entomologist every field in the neighborhood of these mills will be given a plant-to-plant examination. The owners of the cotton plantations involved and the boards of trade of the towns in question have generally evinced thorough-going public-spirited cooperation, the funds for the payment of destroyed cotton at Hearne having been raised by a public subscription by planters and others, the Board assuming merely the actual expense for labor involved. It seems probable that this outbreak at Hearne is the only one which will result from the movement last year of Mexican cotton seed to Texas mills, but the cotton grown in the vicinity of all the towns concerned will be kept under constant observation the balance of the year and none of the locally grown seed will be permitted to be used for planting next season. The crop of this year will be safeguarded, the lint shipped abroad and the seed promptly ground up at the mills.

A special session of the Texas Legislature has passed a bill giving drastic powers under which a cotton-free zone can be created in cooperation with the Federal authorities in Texas along the Mexican border and giving power to control the growth and movement of cotton in this zone and at any other point in Texas which may become invaded by the pink bollworm.

The Board has under consideration a quarantine in relation to two sweet potato insects, namely the sweet potato weevil (*Cylas formicarius*) and a scarabaeid, *Euscepes batatae*, known to occur in the West Indies, Brazil, and various Trans-Pacific countries. It is possible that quarantine action of some kind may be taken also in relation to the new Japanese beetle, *Popillia japonica*, established in the Dreer Nurseries of New Jersey, referred to elsewhere in this News Letter.

FOREST ENTOMOLOGY

A. D. Hopkins, Forest Entomologist.

After spending a few days at the Washington office Dr. Hopkins has returned to Kanawha station, West Virginia to continue phenological and entomological investigations at the temporary field station.

It has recently been decided to open a field station at Lyme, Connecticut where the forest and shade tree insects of the New England states can be studied. A. B. Champlain will be in charge of this station and will go there shortly after October.

F. C. Craighead spent the first two weeks of September in the vicinity of Kansas City, Missouri and Colorado Springs, Colorado. In the former locality he was investigating the cause of the dying oaks. A large percentage of the oaks in this locality (reported generally also through the State) is dying slowly from year to year. The insect associated with these dying trees and no doubt responsible for

the death in a large measure is the two-lined chestnut borer (*Agrilus bilineatus*). They attack the top, killing this in one or two seasons and frequently kill the entire tree.

At Colorado Springs, Mr. Craighead was studying the work carried on at that station for the past two years in the control of poplar borers (*Saperda calcarata* and *Xylotrechus oblitteratus*). At higher elevations entire stands of poplars have been destroyed by these insects.

STORED PRODUCT INSECT INVESTIGATIONS.

E. A. Back, Entomologist in Charge.

F. B. Milliken, of the Wichita station, recently spent two weeks in Washington preparing manuscripts relating to his past work on grasshoppers, chinch bug, and blister beetles. In the future Mr. Milliken will devote his time to a study of insects affecting mills, grain elevators, etc.

Messrs. Millikin and Duckett of this office made a recent visit to The Crown Cork and Seal Co., Baltimore, Maryland, to obtain samples of insect-infested cork and caseine. The latter is a byproduct of milk and is one of the constituents of glue used by this company. *Dermestes vulpinus* Fab., *Cathartus advena* Waltl., and *Laemophloeus minutus* Oliv., were collected on cork in about equal numbers. *Dermestes vulpinus* Fab., *Trogoderma tarsale* Melsh., *Lepisma saccharina* L., and a small undetermined moth were collected in the top of bins containing caseine.

This branch desires to obtain living specimens and samples of injury of all stored product insects for future study in the laboratory. All members of this Bureau are earnestly requested to send infested stored product material to this branch whenever such can be obtained. A. B. Duckett.

TROPICAL AND SUBTROPICAL FRUIT INSECT INVESTIGATIONS

C. L. Marlatt, Entomologist in Charge.

W. W. Yothers has returned to Florida to take up active field work and to cooperate in the Emergency Extension Service in Relation to the control of insects affecting citrus and subtropical fruits. He has submitted for publication the following manuscripts: "Some Reasons for Spraying Citrus Trees in Florida"; and "Spraying for Citrus Pests in Florida."

Harry D. Young has been employed and will be associated with R. S. Woglum, in connection with the Emergency Service of this Bureau. His work will have particular relation to all technical matters concerning fumigation. Mr. Young graduated from the Department of Chemistry of the University of Nebraska in 1908. He had two years' experience in the Arkansas Experiment station, and during the past seven years he has been engaged in agricultural chemistries in the state pathological laboratory at Whittier and since 1913 has been acting superintendent of that laboratory. He is the author of several papers published in technical and other journals having relation to citrus culture and hydrocyanic gas fumigation.

A. D. Borden has been assigned to an investigation of the citrophilous mealey-bug at Upland, Calif., in response to demands following a very serious outbreak of this pest in that section.

R. S. Woglum reports that on the 17th of this month a man was killed at Upland, California, by liquid hydrocyanic acid while making preparations to fumigate citrus trees either due to some defect in the apparatus or possibly to carelessness. This

seems to be the first fatality which has occurred in some 30 years of orchard fumigation in California! Anhydrous liquid hydrocyanic acid for fumigation purposes was apparently first employed by Charles W. Mally in South Africa in 1915 and was subsequently investigated by private concerns in Southern California. As the result of these investigations, considerable interests has been awakened among California growers and fumigators, and at the present time a number of outfits are using this method of fumigation. Just what effect the unfortunate fatality referred to above will have on this method of fumigation in California is problematical. It may result in the return to the pot or machine method of generation.

While it may be that the use of liquid hydrocyanic acid has advantages over the method of fumigation standardized by Mr. Woglum, it must be remembered that its practical value can only be established by a thorough investigation by those familiar with the subject, and commercial work should not be undertaken by those unacquainted with the poisonous nature of liquid hydrocyanic acid which volatilizes with great rapidity. A thorough investigation of this subject by Mr. Young, who is a Chemist as well as a practical fumigator is now in progress under the direction of Mr. Woglum.

Mr. Sasser reports that the Florida fern worm (*Callopietria floridensis*) has recently appeared on Adiantums in a greenhouse in Saint Joseph, Missouri, and to date has practically ruined three crops of ferns when they were ready for marketing. This pest was in all probability introduced into Missouri in a shipment of ferns received from New Orleans, Louisiana, last spring. The Florida fern worm is gradually being distributed from state to state on ferns, and for the past two years it has been responsible for considerable injury to these plants in Anacostia, D. C.

TRUCK CROP INSECT INVESTIGATIONS

F. H. Chittenden, Entomologist in Charge.

M. M. High, Entomological Assistant, is temporarily engaged in the investigation of an outbreak of the pink boll worm in the vicinity of Hearne, Texas.

H. K. Laramore, Scientific Assistant, who has been engaged during the summer in the investigation of insects as carriers of cucurbit diseases has been appointed Extension Entomologist for emergency work in the Gulf Region.

H. O. Marsh, Scientific Assistant, who has been at Washington, D.C., for consultation, and in New Jersey and New York for survey work, has returned to Rocky Ford, Colo., his permanent station.

Marion R. Smith, Scientific Assistant, who has been engaged in the investigation of insects as carriers of cucurbit diseases in collaboration with H. K. Laramore, at Plymouth, Ind. is at Madison, Wisc. for consultation in regard to the work for the year with Neale F. Howard.

Gerson Garb, who has been with the New York Food Commission in extension work during the summer on Long Island, has been appointed as Extension Entomologist and stationed at Mineola, Long Island, N. Y., in food production work.

H. J. Ryan, of Pasadena, Calif., has been assigned to headquarters in cooperation with Southern California Agricultural Commissioners as Extension Entomologist in crop production.

Harry N. Gellert, of Brooklyn, N. Y., has also been appointed as Extension Entomologist and will be assigned to work in the Gulf Region during the winter.

E. P. Barrios, of Plaquemines Parish, La., who has had experience as County Agent, has been appointed on the Extension Service to work in Louisiana.

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Quincy Lowry, who has recently been employed in research work in Connecticut, has accepted an appointment in the Extension Service and will be transferred to Norfolk, Va.

S. W. Frost, a graduate of Cornell University and who has had experience in Orange County, N. Y., will return to that county for service in extension work.

EXTENSION ENTOMOLOGY.

J. A. Hyslop, Entomologist in Extension work.

The Office of Extension Entomology has been created to administer the extension work of the Bureau of Entomology, to be carried on under the Food Production Act, and by cooperative agreement with the States Relations Service, it will also have general supervision of all cooperative work in entomology established under project agreement with the Department and the several states.

Sixteen men have been appointed to act as special field agents in extension work, and have been assigned to the several lines of extension to be undertaken as follows:

Cereal and Forage Crop Insect Control.

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| C. W. Curtin | C. H. Gabb |
| A. L. Ford | Scott Johnson |
| H. M. Fort | M. E. Kimsey |
| | C. F. Stiles |

Deciduous Fruit Insect Control.

J. M. Robinson
O. L. Snap.

Truck Crop Insect Control.

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| E. P. Barrios | H. N. Gellert |
| G. Garb | H. K. Larimore |
| S. W. Frost | Q. S. Lowry |
| | H. J. Ryan. |

Tropical and Subtropical Fruit Insect Control.

H. D. Young.

CEREAL AND FORAGE INSECT INVESTIGATIONS

W. R. Walton, Entomologist in Charge.

The following is a list of the persons appointed as Special Field Agents in connection with the Federal entomological extension service in this branch:

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| Scott Johnson | ----- | Assigned to Kansas. |
| A. L. Ford | ----- | " to Kansas. |
| M. E. Kimsey | ----- | " to Arizona |
| H. M. Fort | ----- | " to Missouri. |
| C. W. Curtin | | (|
| C. F. Stiles | | (At Large. |
| C. H. Gable | | (|

Because of the important crops affected by the activities of this branch, it is extremely desirable that the efficiency of the branch be maintained at the very highest level, and each employee is urged to grasp every legitimate opportunity of extending his usefulness to the respective agricultural community with which he may be in touch and to report promptly to this office any fact which may seem of value in

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